

5th Inter-Agency Conference on Metabolic Engineering

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***15 years of Metabolic Engineering:
A report card and new challenges***

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15 Years of Metabolic Engineering

- **15 very productive years**
- **Established identity of ME with distinct goals and intellectual content**
- **Increased recognition for high quality.Evidence:**
 - ME conference
 - Journal publications
 - *Metabolic Engineering* journal (IF=3.4)
 - Outstanding record of real accomplishments
- **Recent successes have emboldened new research in higher risk areas**

Challenges in looking ahead

Expand research in *high risk* areas with high expectations

Challenges in looking ahead

**Metabolic Engineering in the
post-genomic era**

or,

**How do you facilitate Metabolic
Engineering in an era with lots
and lots of genes?**

Challenges in looking ahead

Expand and exploit opportunities in *Inverse* Metabolic Engineering

Key determinant:

**High throughput methods for selection of
single cells with improved phenotype**

Challenges in looking ahead

**Reduce the mystery in biology
by improving the quality of
quantitative biological data**

Challenges in looking ahead

**Expand the portfolio of products
pursued by methods of Metabolic
Engineering**

Metabolic Engineering: The next 15 years?

- Advance genomic methods for ME
- Focus on *Inverse* Metabolic Engineering
- Critical need: High throughput technologies for single cell selection
- Drastic expansion of the portfolio of ME applications. Needed:
 - Collaboration with industry
 - Collaboration with chemists
- Taking out the mystery from biology with well-controlled and designed experiments